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Acute Hepatitis and Renal Failure Following Ingestion of Raw Carp Gallbladders — Maryland and Pennsylvania, 1991 and 1994

In some cultures, eating gallbladders from certain species of snakes, birds, or fish is believed to improve health. A syndrome of acute hepatitis and renal failure following the ingestion of raw carp gallbladders has been described previously among persons living in Asia (*1–4*). This report summarizes two cases of this syndrome that occurred in residents of Pennsylvania who had eaten the raw bile and gallbladders of carp caught in Maryland.

Patient 1. On July 11, 1991, a 59-year-old man who had immigrated from Korea ate the uncooked gallbladder of a carp he had caught in Maryland from a tributary of the Susquehanna River. Six hours after eating the gallbladder, he developed diarrhea and abdominal pain. On July 14, he was admitted to a hospital with mild jaundice and persistent nausea and vomiting. Laboratory testing revealed elevated levels of serum creatinine (10 mg/dL [normal: 0.7–1.5 mg/dL]), total bilirubin (3.5 mg/dL [normal: 0.1–1.2 mg/dL]), and transaminases (aspartate aminotransferase [AST] 171 U/L [normal: <54 U/L] and alanine aminotransferase [ALT] 1043 U/L [normal: <52 U/L]). Renal ultrasound detected no evidence of hydronephrosis. Despite transient progression of his renal failure, the patient did not require dialysis. He was discharged from the hospital after 6 days with normal urine output, a serum creatinine of 4 mg/dL and normal liver function.

Patient 2. On October 30, 1994, a 41-year-old man who had immigrated from Cambodia ate the raw gallbladders from three carp he had caught at a reservoir near Cowonigo, Maryland. Two hours after eating the gallbladders, he developed transient right upper quadrant abdominal pain, nausea, vomiting, and diarrhea. On November 3, he consulted his physician because of recurrent nausea, abdominal pain, and decreased urinary output. Laboratory findings were consistent with acute hepatitis (AST 1032 U/L, ALT 2028 U/L, and total bilirubin 4.8 mg/dL) and acute renal failure (serum creatinine 6.0 mg/dL). Abdominal ultrasound revealed normal-sized kidneys; there was no evidence of urinary or biliary tract obstruction. The patient was hospitalized for hemodialysis when, 5 days after his exposure, his serum creatinine increased to 12.6 mg/dL. The patient's renal and hepatic function gradually improved, and he was discharged on November 16 with a serum creatinine of 8 mg/dL and markedly improved liver function.

Acute Hepatitis and Renal Failure — Continued

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Editorial Note: Despite the widespread use of basic public health food safety and hygiene measures, clinicians and public health practitioners have encountered an increasing diversity of foodborne illnesses. Factors contributing to this trend include changes in the technology of food production, greater importation of food from other countries, and a diversification of food preparation and eating habits.

Although acute hepatitis and renal failure following ingestion of raw carp gallbladders have not been reported previously in persons in the United States, such cases have been recognized in persons in Taiwan (*1,2*), Hong Kong (*3*), and South Korea (*4*). Clinical manifestations of this syndrome include acute gastrointestinal symptoms followed several days later by jaundice and oliguria. Histologic studies of kidney and liver tissue specimens from patients demonstrate acute tubular necrosis and focal hepatitis (*4*). Although the bile component(s) responsible for this syndrome have not been characterized fully (*5*), cyprinol, a C_{27} alcohol found in the bile of cyprinid fish, may have a direct toxic affect on the kidneys (*1*). No specific treatment has been identified; renal and hepatic impairment generally resolve within 3 weeks with supportive care.

Five species of fish belonging to the order Cypriniformes have been associated with bile-induced hepatitis and renal failure (*4*). Two of these species are found in the United States: the common carp (*Cyprinus carpio*), which is abundant and widely distributed in North America, and the grass carp (*Ctenopharyngodon idellus*), which has been introduced in many areas in the eastern United States (J. Sheferland, Chesapeake Bay Field Station, U.S. Fish and Wildlife Service, personal communication, 1995). Because they can be caught without limit, carp are an inexpensive food source used extensively by some populations.

The syndrome of bile-induced hepatitis and renal failure described in this report, in addition to previous reports of foodborne illnesses (e.g., trichinosis [*6*] and mushroom poisoning [*7*]), suggest that clinicians should be aware of eating habits and food exposures that may pose a risk for their patients. The cases described in this report also underscore the importance of obtaining careful food histories from patients, including those whose illness may not initially appear to be food-related.

References

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Chancroid Detected by Polymerase Chain Reaction — Jackson, Mississippi, 1994–1995

Chancroid is a sexually transmitted disease (STD) caused by infection with *Haemophilus ducreyi* and is characterized by genital ulceration. Chancroid is underreported in the United States (*1*), reflecting, in part, difficulties in diagnosis because of clinical similarities between chancroid and other ulcerative STDs. In addition, laboratory confirmation by culture is 53%–84% sensitive and often is unavailable in clinical settings (*2*). In September 1994, clinicians at the District V STD clinic of the Mississippi State Department of Health (MSDH) in Jackson reported examining patients with genital ulcers characteristic of chancroid but lacked capacity to confirm the diagnosis. To determine the cause of the ulcers, MSDH, in conjunction with CDC, conducted an investigation of all patients with genital ulcers examined at the Jackson STD clinic during October 20, 1994–February 1, 1995. This report summarizes the findings of the investigation.

Swab specimens were obtained from the genital ulcers of all patients examined at the Jackson STD clinic. Specimens were tested at an independent laboratory using a research prototype multiplex polymerase chain reaction (PCR) assay that can amplify and subsequently detect DNA from *H. ducreyi*, *Treponema pallidum*, and herpes simplex virus (HSV) from a single swab specimen (*3*). All positive PCR results were confirmed by additional PCR research assays that amplify and detect different gene sequences. Serologic testing included standard human immunodeficiency virus (HIV) testing at the Mississippi State Public Health Laboratory.

During October 20, 1994–February 1, 1995, a total of 81 patients with genital ulcers were examined at the clinic. Of these, 66 (82%) were male. The median age was 33 years (range: 16 years–81 years). Of the 81 patients, 41 (51%) had *H. ducreyi* infection confirmed by PCR. For 33 patients, DNA sequences from *H. ducreyi* only were identified; for seven, DNA sequences from *H. ducreyi* and one other organism were identified; and for one, DNA sequences from *H. ducreyi* and two other organisms were identified (Table 1, page 573). For 12 (15%) patients, no etiology was identified. Of 79 patients tested for HIV antibody, eight (10%) were positive.

Because this investigation confirmed a high prevalence of chancroid among persons with genital ulcers, MSDH now recommends presumptive treatment for both syphilis and chancroid for all patients in Jackson with nonherpetic genital ulcers and for their sex partners. In March 1995, MSDH initiated statewide surveillance for genital ulcers by requesting 25 public clinics and emergency departments to record information about every patient with a genital ulcer. In addition, a case-control study is under way in Jackson to assess risk factors for chancroid, syphilis, and genital herpes. MSDH plans to examine risk and health-seeking behaviors of persons with genital ulcers and to provide additional HIV-prevention services to these persons.

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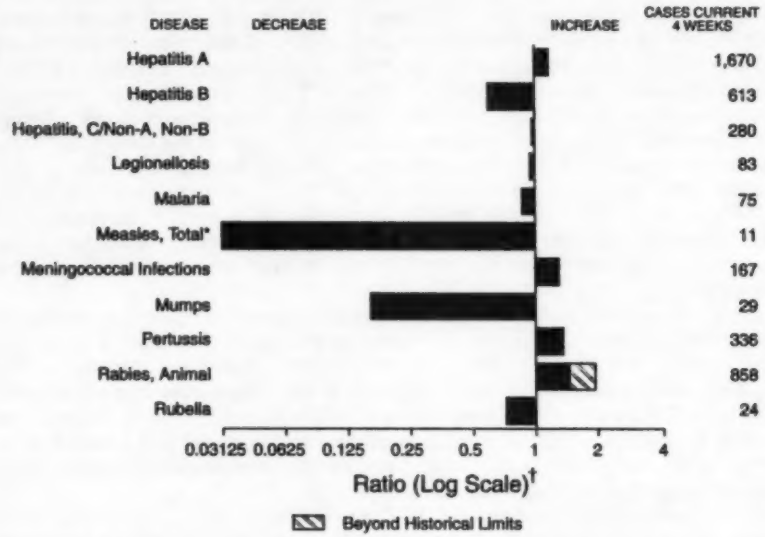
(Continued on page 573)

FIGURE I. Notifiable disease reports, comparison of 4-week totals ending July 29, 1995, with historical data — United States



*The large apparent decrease in the number of reported cases of measles (total) reflects dramatic fluctuations in the historical baseline.
†Ratio of current 4-week total to mean of 15 4-week totals (from previous, comparable, and subsequent 4-week periods for the past 5 years). The point where the hatched area begins is based on the mean and two standard deviations of these 4-week totals.

TABLE I. Summary — cases of specified notifiable diseases, United States, cumulative, week ending July 29, 1995 (30th Week)

	Cum. 1995		Cum. 1995
Anthrax	-	Psittacosis	39
Brucellosis	51	Rabies, human	1
Cholera	8	Rocky Mountain Spotted Fever	224
Congenital rubella syndrome	4	Syphilis, congenital, age < 1 year§	132
Diphtheria*	-	Tetanus	13
Haemophilus influenzae†	718	Toxic shock syndrome	113
Hansen Disease	81	Trichinosis	23
Plague	5	Typhoid fever	171
Poliomyelitis, Paralytic	-		

*The case previously reported in 1995 had onset of illness in October 1994. It will now be included in 1994 data.
†Of 697 cases of known age, 174 (25%) were reported among children less than 5 years of age.
§Updated quarterly from reports to the Division of Sexually Transmitted Diseases and HIV Prevention, National Center for Prevention Services. This total through first quarter 1995.
-: no reported cases

TABLE II. Cases of selected notifiable diseases, United States, weeks ending July 29, 1995, and July 30, 1994 (30th Week)

Reporting Area	AIDS*	Gonorrhea		Hepatitis (Viral), by type						Legionellosis	
				A		B		C/NA,NB			
	Cum. 1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	35,614	201,822	226,303	14,951	13,237	5,866	6,595	2,477	2,357	721	826
NEW ENGLAND	1,797	2,591	4,552	151	182	119	224	68	91	14	18
Maine	71	44	54	17	17	6	10	-	-	4	2
N.H.	56	71	63	6	12	13	16	9	7	1	-
Vt.	15	30	16	4	4	1	6	1	6	-	-
Mass.	812	1,558	1,705	82	75	45	137	56	62	8	8
R.I.	137	288	272	18	14	8	5	2	16	1	8
Conn.	706	600	2,442	44	60	46	50	-	-	N	N
MID. ATLANTIC	9,135	21,246	25,217	891	967	672	852	229	280	108	128
Upstate N.Y.	1,133	3,846	5,661	228	369	220	231	120	128	30	26
N.Y. City	4,481	7,375	9,353	408	329	190	180	1	1	1	-
N.J.	2,225	2,224	2,982	129	182	155	225	86	125	15	19
Pa.	1,296	7,801	7,221	126	87	107	216	22	26	62	83
E.N. CENTRAL	2,897	42,915	45,517	1,738	1,258	562	690	161	206	190	243
Ohio	607	13,245	13,151	1,106	414	73	102	6	14	94	111
Ind.	261	4,523	4,800	92	220	131	127	1	8	44	24
Ill.	1,284	11,653	13,525	217	331	94	183	33	56	13	23
Mich.	572	10,202	9,837	215	154	233	229	121	128	21	51
Wis.	173	3,292	4,204	108	139	31	49	-	-	18	34
W.N. CENTRAL	867	10,887	12,643	1,016	622	341	378	60	53	72	60
Minn.	204	1,601	1,821	110	123	32	40	2	11	-	2
Iowa	44	798	719	44	29	26	17	7	7	14	25
Mo.	348	6,248	7,183	719	282	239	280	37	12	41	19
N. Dak.	5	16	25	18	3	4	-	4	1	4	4
S. Dak.	9	100	110	25	17	2	-	1	-	-	-
Nebr.	71	491	794	31	90	18	20	5	9	8	8
Kans.	188	1,635	1,991	89	78	20	21	4	13	5	2
S. ATLANTIC	9,055	58,452	60,215	707	659	836	1,290	188	287	130	191
Del.	165	1,206	1,067	7	16	2	9	1	1	1	-
Md.	1,313	7,193	11,084	124	98	153	206	2	17	23	50
D.C.	579	2,595	4,212	15	15	13	30	-	-	4	5
Va.	645	5,711	7,290	108	91	59	71	9	18	8	5
W. Va.	44	471	416	11	7	29	23	26	21	3	1
N.C.	490	13,808	15,382	68	69	178	186	33	37	23	13
S.C.	449	6,709	7,342	25	25	33	22	15	3	21	9
Ga.	1,090	9,134	U	54	23	63	496	15	159	23	81
Fla.	4,280	11,625	13,422	295	315	308	267	87	31	24	27
E.S. CENTRAL	1,109	25,007	25,933	930	309	532	650	650	509	24	64
Ky.	155	2,760	2,710	26	102	41	57	13	17	3	8
Tenn.	437	7,712	8,328	809	125	424	548	635	484	15	32
Ala.	298	10,451	8,904	53	50	67	45	2	8	5	9
Miss.	219	4,084	5,991	43	32	-	-	-	-	1	15
W.S. CENTRAL	3,137	20,840	27,640	1,838	1,717	858	863	379	158	8	23
Ark.	137	2,069	4,008	227	48	29	14	3	4	1	4
La.	502	6,925	7,237	53	86	110	105	101	82	2	6
Okla.	154	1,382	2,781	435	153	271	72	248	37	3	9
Tex.	2,344	10,464	13,614	1,123	1,430	448	472	27	35	2	4
MOUNTAIN	1,119	5,031	5,734	2,345	2,556	491	368	268	257	82	59
Mont.	9	40	44	60	15	16	15	10	5	4	14
Idaho	26	68	47	215	192	58	58	33	56	2	1
Wyo.	6	28	47	79	13	16	14	119	80	6	3
Colo.	372	1,686	1,908	307	305	72	60	39	44	34	13
N. Mex.	107	590	577	485	648	185	122	34	37	3	2
Ariz.	299	1,735	1,968	656	970	78	31	17	12	7	4
Utah	69	131	172	487	264	53	36	8	11	13	6
Nev.	231	753	973	56	149	15	32	8	12	13	16
PACIFIC	6,498	14,853	18,852	5,335	4,967	1,254	1,480	474	516	93	40
Wash.	495	1,432	1,897	430	656	104	133	122	145	12	8
Oreg.	223	212	559	1,077	558	52	83	28	23	-	-
Calif.	5,594	12,435	15,641	3,894	3,585	1,080	1,230	314	344	78	30
Alaska	46	409	525	29	137	6	10	1	-	-	-
Hawaii	140	365	430	105	31	12	24	9	4	5	2
Guam	-	51	75	2	13	1	4	-	-	1	1
P.R.	1,514	316	312	60	38	453	193	217	98	-	-
V.I.	21	6	12	-	2	2	6	-	1	-	-
Amer. Samoa	-	14	18	5	5	-	-	-	-	-	-
C.N.M.I.	-	20	31	15	4	7	1	-	-	-	-

N: Not notifiable U: Unavailable -: no reported cases C.N.M.I.: Commonwealth of Northern Mariana Islands

*Updated monthly to the Division of HIV/AIDS Prevention, National Center for Prevention Services, last update June 29, 1995.

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending July 29, 1995, and July 30, 1994 (30th Week)

Reporting Area	Lyme Disease		Malaria		Measles (Rubeola)						Meningococcal Infections		Mumps	
					Indigenous		Imported*		Total					
	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	1995	Cum. 1995	1995	Cum. 1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	3,357	5,439	589	551	3	209	1	10	219	818	1,945	1,782	510	829
NEW ENGLAND	949	1,238	26	39	3	7	-	-	7	24	94	77	9	15
Maine	4	6	3	2	-	-	-	-	-	4	6	13	4	3
N.H.	15	13	1	3	-	-	-	-	-	1	17	7	1	4
Vt.	6	6	-	1	-	-	-	-	-	3	6	2	-	-
Mass.	94	71	9	18	-	2	-	-	2	7	34	34	2	1
R.I.	153	174	2	5	3	5	-	-	5	6	-	-	-	1
Conn.	677	968	11	10	-	-	-	-	-	3	31	21	2	6
MID. ATLANTIC	1,847	3,246	148	92	-	4	-	2	6	209	235	186	69	78
Upstate N.Y.	940	2,214	35	27	-	-	-	-	-	15	79	61	19	23
N.Y. City	66	8	68	29	-	2	-	2	4	13	28	24	5	2
N.J.	356	534	32	18	-	2	-	-	2	173	61	40	6	13
Pa.	485	390	13	18	-	-	-	-	-	8	67	61	39	40
E.N. CENTRAL	43	358	69	59	-	7	-	2	9	102	256	259	86	147
Ohio	28	22	5	8	-	1	-	-	1	17	85	74	26	41
Ind.	7	10	12	9	-	-	-	-	-	1	39	37	3	6
Ill.	3	16	32	26	-	-	-	1	1	56	71	89	26	63
Mich.	5	5	13	14	-	4	-	1	5	25	51	32	31	31
Wis.	-	305	7	2	-	2	-	-	2	3	10	27	-	6
W.N. CENTRAL	43	94	14	27	-	2	-	-	2	169	119	116	31	43
Minn.	-	22	3	8	-	-	-	-	-	-	18	11	2	3
Iowa	6	4	1	4	-	-	-	-	-	7	23	13	8	10
Mo.	20	63	4	10	-	1	-	-	1	159	45	57	17	27
N. Dak.	-	-	1	1	-	-	-	-	-	-	1	1	-	2
S. Dak.	-	-	1	-	-	-	-	-	-	-	5	7	-	-
Nebr.	1	2	3	3	-	-	-	-	-	2	10	9	4	1
Kans.	16	3	1	1	-	1	-	-	1	1	17	18	-	-
S. ATLANTIC	334	368	123	103	-	10	1	1	11	52	352	264	80	133
Del.	7	44	1	3	-	-	-	-	-	-	5	4	-	-
Md.	230	128	32	43	-	-	1	1	1	3	28	22	20	36
D.C.	-	3	11	8	-	-	-	-	-	-	3	3	-	-
Va.	30	46	26	12	-	-	-	-	-	2	41	50	15	29
W. Va.	16	10	1	-	-	-	-	-	-	37	7	11	-	3
N.C.	26	43	11	2	-	-	-	-	-	3	53	41	16	33
S.C.	8	8	-	2	-	-	-	-	-	-	47	12	7	6
Ga.	10	82	12	17	-	2	-	-	2	2	74	60	8	8
Fla.	7	6	29	16	-	8	-	-	8	5	94	61	14	18
E.S. CENTRAL	22	25	11	20	-	-	-	-	-	28	122	134	13	15
Ky.	4	15	1	7	-	-	-	-	-	-	40	29	-	-
Tenn.	15	7	4	7	-	-	-	-	-	28	35	25	-	5
Ala.	1	3	5	5	-	-	-	-	-	-	28	51	4	3
Miss.	2	-	1	1	-	-	-	-	-	-	19	29	9	7
W.S. CENTRAL	62	62	18	24	-	19	-	-	19	16	241	216	34	169
Ark.	5	3	3	2	-	2	-	-	2	1	20	35	2	5
La.	1	-	1	4	-	17	-	-	17	1	35	28	8	20
Okla.	25	32	1	2	-	-	-	-	-	-	23	22	-	23
Tex.	31	27	11	16	-	-	-	-	-	14	163	131	24	121
MOUNTAIN	7	3	35	21	-	49	-	1	50	150	141	125	24	34
Mont.	-	-	3	-	-	-	-	-	-	-	2	4	1	-
Idaho	-	1	1	2	-	-	-	-	-	-	6	15	2	7
Wyo.	4	1	-	1	-	-	-	-	-	-	5	5	-	1
Colo.	1	-	16	9	-	8	-	-	8	19	36	23	1	2
N. Mex.	1	-	4	3	-	30	-	1	31	-	28	12	N	N
Ariz.	-	-	6	1	-	10	-	-	10	1	46	43	2	3
Utah	-	1	4	4	-	-	-	-	-	130	11	16	11	12
Nev.	1	-	1	1	-	1	-	-	1	9	7	7	6	9
PACIFIC	50	45	147	166	-	111	-	4	115	59	385	405	164	195
Wash.	4	-	13	15	-	13	-	2	15	3	68	64	10	14
Oreg.	3	5	5	12	-	1	-	-	1	-	62	89	N	N
Calif.	43	40	119	129	-	97	-	1	98	49	248	245	141	169
Alaska	-	-	1	-	-	-	-	-	-	5	6	2	9	2
Hawaii	-	-	9	10	-	-	-	1	1	2	3	5	4	10
Guam	-	-	-	-	U	-	U	-	-	228	3	-	3	4
P.R.	-	-	1	3	-	11	-	-	11	11	13	5	-	2
V.I.	-	-	-	-	U	-	U	-	-	-	-	-	2	3
Amer. Samoa	-	-	-	-	-	-	-	-	-	-	-	-	-	2
C.N.M.I.	-	-	1	1	U	-	U	-	-	29	-	-	-	2

*For imported measles, cases include only those resulting from importation from other countries.
N: Not notifiable U: Unavailable -: no reported cases

TABLE II. (Cont'd.) Cases of selected notifiable diseases, United States, weeks ending July 29, 1995, and July 30, 1994 (30th Week)

Reporting Area	Pertussis			Rubella			Syphilis (Primary & Secondary)		Tuberculosis		Rabies, Animal	
	1995	Cum. 1995	Cum. 1994	1995	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994	Cum. 1995	Cum. 1994
UNITED STATES	84	1,633	2,062	3	91	198	8,749	12,367	10,537	12,340	4,092	4,242
NEW ENGLAND	7	235	221	-	22	126	99	134	258	259	935	1,066
Maine	-	21	2	-	1	-	2	4	12	-	21	-
N.H.	-	21	43	-	1	-	1	3	9	13	101	105
Vt.	1	29	28	-	-	-	-	-	3	4	118	92
Mass.	5	153	125	-	6	123	35	54	129	130	306	405
R.I.	1	1	5	-	-	2	1	11	27	31	178	5
Conn.	-	10	18	-	14	1	60	62	78	81	211	458
MID. ATLANTIC	1	143	321	1	7	6	513	809	2,200	2,405	808	1,045
Upstate N.Y.	1	73	124	1	4	5	43	97	245	319	312	771
N.Y. City	-	23	67	-	3	-	243	358	1,180	1,461	-	-
N.J.	-	5	10	-	-	1	106	131	416	436	224	166
Pa.	-	42	120	-	-	-	121	223	359	189	272	108
E.N. CENTRAL	3	150	331	-	2	9	1,495	1,793	1,042	1,182	33	32
Ohio	-	52	96	-	-	-	522	670	161	188	4	-
Ind.	-	13	39	-	-	-	152	142	38	98	5	7
Ill.	3	38	67	-	-	1	554	609	590	591	3	10
Mich.	-	35	26	-	2	8	170	173	218	269	18	9
Wis.	-	12	103	-	-	-	97	199	35	36	3	6
W.N. CENTRAL	3	87	86	-	-	2	461	720	328	305	194	132
Minn.	-	28	39	-	-	-	28	25	73	64	6	14
Iowa	-	5	6	-	-	-	28	33	41	28	70	54
Mo.	-	18	24	-	-	2	393	619	131	141	19	11
N. Dak.	-	6	4	-	-	-	-	1	2	6	23	6
S. Dak.	-	7	1	-	-	-	-	1	13	16	49	22
Nebr.	1	5	5	-	-	-	3	11	10	8	-	-
Kans.	2	18	7	-	-	-	9	30	58	42	27	25
S. ATLANTIC	26	185	203	1	25	13	2,193	3,168	1,980	2,293	1,252	1,173
Del.	1	8	1	-	-	-	8	18	12	26	33	31
Md.	-	16	57	-	-	-	129	147	238	180	247	337
D.C.	1	4	4	-	-	-	70	142	62	68	10	2
Va.	1	10	17	-	-	-	336	434	136	201	245	224
W. Va.	-	-	2	-	-	-	8	8	49	51	70	46
N.C.	5	73	52	-	-	-	660	1,011	241	259	282	101
S.C.	1	16	10	-	1	-	341	442	190	217	81	109
Ga.	6	13	20	-	1	1	428	495	307	440	164	234
Fla.	11	45	40	1	23	12	213	471	745	851	120	89
E.S. CENTRAL	3	80	103	-	-	-	2,256	2,181	652	853	144	118
Ky.	-	-	54	-	-	-	119	124	53	193	14	10
Tenn.	1	50	18	-	-	-	474	582	255	265	49	34
Ala.	2	30	20	-	-	-	362	397	218	244	78	69
Miss.	-	-	11	N	N	N	1,301	1,078	126	151	3	3
W.S. CENTRAL	3	107	66	-	6	12	1,253	2,821	1,300	1,566	491	432
Ark.	-	-	12	-	-	-	100	300	92	146	21	15
La.	1	10	9	-	-	-	624	1,041	6	7	23	47
Okla.	-	22	21	-	-	4	47	98	124	148	25	24
Tex.	2	75	24	-	6	8	482	1,382	1,078	1,265	422	346
MOUNTAIN	4	306	260	-	4	4	168	184	340	307	86	84
Mont.	-	3	3	-	-	-	4	2	10	9	29	10
Idaho	-	77	24	-	-	-	-	1	9	11	1	2
Wyo.	-	1	-	-	-	-	4	-	1	4	20	14
Colo.	2	23	143	-	-	-	80	91	22	33	-	7
N. Mex.	2	53	16	-	-	-	29	18	50	43	3	2
Ariz.	-	128	59	-	3	-	19	37	168	124	25	40
Utah	-	16	13	-	1	3	4	9	19	23	7	6
Nev.	-	5	2	-	-	1	28	26	61	60	1	3
PACIFIC	34	340	461	1	25	26	311	557	2,437	3,170	149	163
Wash.	2	78	56	-	1	-	9	25	156	155	2	6
Oreg.	1	11	61	-	1	3	6	20	25	90	-	2
Calif.	27	216	334	1	20	20	295	506	2,116	2,734	143	124
Alaska	-	-	-	-	-	-	1	3	47	37	4	31
Hawaii	4	35	10	-	3	3	-	1	93	154	-	-
Guam	U	-	2	U	-	1	3	3	33	45	-	-
P.R.	-	6	2	-	-	-	158	193	89	102	25	54
V.I.	U	-	-	U	-	-	2	22	-	-	-	-
Amer. Samoa	-	-	-	-	-	-	-	1	3	3	-	-
C.N.M.I.	U	-	-	U	-	-	3	1	13	16	-	-

U: Unavailable -: no reported cases

TABLE III. Deaths in 121 U.S. cities,* week ending July 29, 1995 (30th Week)

Reporting Area	All Causes, By Age (Years)						P&I† Total
	All Ages	≥65	45-64	25-44	1-24	<1	
NEW ENGLAND	584	406	94	47	8	16	33
Boston, Mass.	136	87	24	16	3	8	8
Bridgeport, Conn.	33	18	6	1	-	-	2
Cambridge, Mass.	18	14	3	1	-	-	-
Fall River, Mass.	34	30	1	2	1	-	1
Hartford, Conn.	57	36	13	4	-	4	-
Lowell, Mass.	28	22	5	1	-	-	3
Lynn, Mass.	16	6	5	-	-	-	1
New Bedford, Mass.	22	18	2	2	-	-	1
New Haven, Conn.	38	27	3	5	1	2	3
Providence, R.I.	65	43	11	6	1	4	3
Somerville, Mass.	4	3	1	-	-	-	-
Springfield, Mass.	43	30	5	6	2	-	3
Waterbury, Conn.	24	20	3	1	-	-	1
Worcester, Mass.	66	52	12	2	-	-	7
MID. ATLANTIC	2,637	1,683	543	301	60	43	116
Albany, N.Y.	41	29	7	3	2	-	3
Allentown, Pa.	27	22	4	1	-	-	-
Buffalo, N.Y.	104	74	17	10	2	1	4
Camden, N.J.	29	14	11	2	1	1	1
Elizabeth, N.J.	23	13	3	6	1	-	-
Erie, Pa.§	42	33	6	3	-	-	3
Jersey City, N.J.	46	27	9	8	-	2	-
New York City, N.Y.	1,304	784	287	186	32	15	32
Newark, N.J.	67	24	21	15	4	3	6
Paterson, N.J.	31	14	6	1	1	2	2
Philadelphia, Pa.	500	323	109	48	11	9	34
Pittsburgh, Pa.§	46	36	7	1	-	2	1
Reading, Pa.	21	12	6	1	2	-	1
Rochester, N.Y.	130	88	20	4	3	5	13
Schenectady, N.Y.	26	21	4	1	-	-	1
Scranton, Pa.§	33	28	4	-	-	1	1
Syracuse, N.Y.	102	84	12	5	-	1	9
Trenton, N.J.	26	19	5	1	-	1	1
Utica, N.Y.	13	10	1	2	-	-	-
Yonkers, N.Y.	26	18	4	3	1	-	4
E.N. CENTRAL	1,994	1,282	376	190	59	55	97
Akron, Ohio	50	39	8	2	1	-	-
Canton, Ohio	30	23	6	1	-	-	1
Chicago, Ill.	418	248	89	52	15	16	28
Cincinnati, Ohio	144	89	27	11	1	4	5
Cleveland, Ohio	188	111	29	17	5	6	8
Columbus, Ohio	164	108	37	11	6	4	9
Dayton, Ohio	113	68	32	12	3	-	7
Detroit, Mich.	201	112	34	34	13	8	3
Evansville, Ind.	39	33	4	2	-	-	4
Fort Wayne, Ind.	56	39	7	5	5	-	4
Gary, Ind.	27	17	5	4	1	-	-
Grand Rapids, Mich.	62	44	9	3	3	3	8
Indianapolis, Ind.	111	73	23	9	2	4	7
Madison, Wis.	U	U	U	U	U	U	U
Milwaukee, Wis.	142	103	26	11	-	2	6
Peoria, Ill.	54	39	9	4	-	2	3
Rockford, Ill.	41	30	8	2	-	1	2
South Bend, Ind.	37	28	5	2	1	1	1
Toledo, Ohio	87	65	11	5	2	4	5
Youngstown, Ohio	50	39	7	3	1	-	2
W.N. CENTRAL	662	438	124	44	13	23	36
Des Moines, Iowa	76	51	17	5	-	3	4
Duluth, Minn.	27	17	9	1	-	-	6
Kansas City, Kans.	U	U	U	U	U	U	U
Kansas City, Mo.	121	64	24	8	2	3	5
Lincoln, Nebr.	37	31	5	1	-	-	1
Minneapolis, Minn.	137	87	27	10	4	9	4
Omaha, Nebr.	79	54	14	6	1	4	4
St. Louis, Mo.	128	93	20	5	5	3	10
St. Paul, Minn.	59	41	8	8	1	1	2
Wichita, Kans.	U	U	U	U	U	U	U
S. ATLANTIC	980	584	214	110	34	27	44
Atlanta, Ga.	185	100	38	25	-	2	5
Baltimore, Md.	134	88	32	23	6	7	6
Charlotte, N.C.	49	32	8	4	3	2	3
Jacksonville, Fla.	121	87	19	10	4	1	3
Miami, Fla.	U	U	U	U	U	U	U
Norfolk, Va.	49	31	14	3	-	1	6
Richmond, Va.	88	52	16	13	5	2	2
Savannah, Ga.	35	24	6	4	1	-	5
St. Petersburg, Fla.	48	33	9	3	1	2	2
Tampa, Fla.	147	97	32	6	7	4	11
Washington, D.C.	127	67	34	15	5	6	1
Wilmington, Del.	17	5	6	4	2	-	-
E.S. CENTRAL	777	496	162	60	36	15	64
Birmingham, Ala.	141	81	29	12	14	3	2
Chattanooga, Tenn.	67	45	11	4	3	4	5
Knoxville, Tenn.	83	48	9	3	2	1	4
Lexington, Ky.	53	32	10	1	3	1	7
Memphis, Tenn.	186	114	48	16	7	1	20
Mobile, Ala.	77	53	14	7	1	2	10
Montgomery, Ala.	52	35	11	4	1	1	2
Nashville, Tenn.	138	88	30	13	5	2	14
W.S. CENTRAL	1,397	901	271	145	51	29	62
Austin, Tex.	78	50	20	7	1	-	2
Baton Rouge, La.	35	25	3	7	-	-	-
Corpus Christi, Tex.	U	U	U	U	U	U	U
Dallas, Tex.	171	96	35	28	8	4	4
El Paso, Tex.	68	40	16	6	1	3	5
Ft. Worth, Tex.	101	69	17	4	7	4	3
Houston, Tex.	368	227	69	41	19	12	24
Little Rock, Ark.	39	33	4	2	-	-	4
New Orleans, La.	185	117	36	26	3	3	-
San Antonio, Tex.	213	146	40	17	8	2	10
Shreveport, La.	43	29	10	3	1	-	3
Tulsa, Okla.	96	69	21	4	3	1	7
MOUNTAIN	825	513	154	96	45	16	44
Albuquerque, N.M.	100	55	25	11	8	1	6
Colo. Springs, Colo.	36	25	5	2	2	2	1
Denver, Colo.	119	81	18	14	2	4	11
Las Vegas, Nev.	155	93	33	15	10	3	5
Ogden, Utah	12	7	3	2	-	-	1
Phoenix, Ariz.	193	110	38	33	10	2	11
Pueblo, Colo.	14	12	2	-	-	-	2
Salt Lake City, Utah	85	48	18	11	6	2	4
Tucson, Ariz.	111	82	12	8	7	2	3
PACIFIC	1,624	1,077	278	180	53	33	111
Berkeley, Calif.	13	8	3	1	-	1	-
Fresno, Calif.	83	51	13	10	3	6	8
Glendale, Calif.	30	28	2	2	-	-	-
Honolulu, Hawaii	77	57	12	3	4	1	2
Long Beach, Calif.	81	56	14	5	2	4	10
Los Angeles, Calif.	415	264	69	57	19	3	18
Pasadena, Calif.	26	19	2	3	1	1	6
Portland, Oreg.	144	103	24	14	-	3	7
Sacramento, Calif.	U	U	U	U	U	U	U
San Diego, Calif.	143	99	17	23	8	5	17
San Francisco, Calif.	130	82	34	28	4	2	10
San Jose, Calif.	163	113	34	11	2	3	15
Santa Cruz, Calif.	33	22	10	1	-	-	2
Seattle, Wash.	143	93	21	20	5	4	7
Spokane, Wash.	50	43	7	-	-	-	2
Tacoma, Wash.	93	70	18	2	5	-	7
TOTAL	11,480¶	7,390	2,216	1,173	359	257	607

*Mortality data in this table are voluntarily reported from 121 cities in the United States, most of which have populations of 100,000 or more. A death is reported by the place of its occurrence and by the week that the death certificate was filed. Fetal deaths are not included.

†Pneumonia and influenza.

§Because of changes in reporting methods in these 3 Pennsylvania cities, these numbers are partial counts for the current week. Complete counts will be available in 4 to 6 weeks.

¶Total includes unknown ages.

U: Unavailable -: no reported cases

Chancroid — Continued

TABLE 1. Etiology of genital ulcers among patients examined at the Mississippi State Department of Health sexually transmitted disease clinic — Jackson, Mississippi, October 20, 1994–February 1, 1995*

Etiology by PCR	No.	(%)
Single infection		
Haemophilus ducreyi	33	(41)
Treponema pallidum	8	(10)
Herpes simplex virus (HSV)	18	(22)
Multiple infections		
H. ducreyi, T. pallidum	7	(9)
T. pallidum, HSV	2	(2)
H. ducreyi, T. pallidum, and HSV	1	(1)
Other		
No etiology identified	12	(15)
Total	**81**	**(100)**

*All specimens were analyzed at an independent laboratory using a research prototype multiplex polymerase chain reaction (PCR) assay that can amplify and subsequently detect DNA from *H. ducreyi, Treponema pallidum*, and herpes simplex virus (HSV) from a single swab specimen (*3*).

Editorial Note: In the United States, *H. ducreyi* accounts for a small proportion of genital ulcers. Although the number of reported cases of chancroid has decreased every year since 1987, cases are still reported from some large urban areas. In 1994, a total of 773 cases of chancroid were reported to CDC, including 357 from New York City, 201 from New Orleans, 38 from Houston, and 36 from Chicago (CDC, unpublished data, 1995). The investigation in Jackson, Mississippi, suggests that a substantially greater number of cases of chancroid occur than are reported. Based on sensitive PCR testing, approximately half the cases of genital ulcers were found to involve chancroid. Because chancroid is difficult to diagnose by clinical and tradition- al laboratory means, it probably is underdiagnosed and undertreated in many set-tings (*1*).

Identification of chancroid is particularly important because it is the STD most strongly associated with an increased risk for HIV transmission (*4,5*). Without proper treatment, ulcers require longer periods to heal, thereby prolonging for patients their susceptibility to or risk for HIV transmission or acquisition.

Chancroid should be considered in the differential diagnosis of genital ulcers. Clinicians who suspect chancroid should confirm the diagnosis by culture. Assistance can be obtained from state and territorial public health laboratories or STD programs, which also can contact CDC's Division of Sexually Transmitted Diseases Laboratory Research, National Center for Infectious Diseases (fax [404] 639-3976), or Epidemiology and Surveillance Branch, Division of Sexually Transmitted Disease Prevention, National Center for Prevention Services (fax [404] 639-8610). In communities in which the prevalence of chancroid is high, patients with genital ulcers should be treated presumptively for both chancroid and syphilis, as recommended in the *1993 Sexually Transmitted Diseases Treatment Guidelines* (*6*).

Syphilis and genital herpes, the two most common ulcerative STDs in the United States, also have been associated with an increased risk for HIV infection (*7*). In Jackson, a high proportion of all patients with genital ulcers tested positive for HIV

Chancroid — Continued

antibodies. This finding underscores the need for health-care personnel in other areas to evaluate the occurrence of HIV infection among patients with genital ulcers and to target HIV-prevention services toward persons and populations with or at risk for ulcerative STDs.

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Notice to Readers

Update: Recommendations to Prevent Hepatitis B Virus Transmission — United States

In October 1994, the Advisory Committee on Immunization Practices (ACIP) approved recommendations expanding the vaccination strategy to eliminate hepatitis B virus (HBV) transmission in the United States. These recommendations include:

1. Vaccination of all unvaccinated children aged <11 years who are Pacific Islanders or who reside in households of first-generation immigrants from countries where HBV is of high or intermediate endemicity.
2. Vaccination of all 11–12-year-old children who have not previously received hepatitis B vaccine.

Reported by: Epidemiology and Surveillance Div, National Immunization Program; Hepatitis Br, Div of Viral and Rickettsial Diseases, National Center for Infectious Diseases, CDC.

Editorial Note: In November 1991, the ACIP recommended that hepatitis B vaccine be integrated into infant vaccination schedules (*1*). However, high rates of HBV infection continue to occur among children aged 0–10 years who are Alaskan Natives, Pacific Islanders, and infants of first-generation immigrant mothers from areas where HBV infection is of high or intermediate endemicity. Among children in these populations, the prevalence of chronic HBV infection ranges from 2%–5%, and infection rates average 2% per year (*2,3*). These infections occur in children born to women who are hepatitis B surface antigen-negative and account for a large proportion of the chronic HBV infections that occur each year in the United States. Of the estimated 1 million Asian and Pacific Islander children aged 2–10 years in the United States, <10% have received hepatitis B vaccine. Special efforts should be made to ensure hepatitis B vaccination of these populations because of their high risk for chronic HBV infection and death from HBV-related chronic liver disease.

Notices to Readers — Continued

Routine infant hepatitis B vaccination is the most effective means to prevent HBV transmission in the United States. The effect of routine infant vaccination on acute disease incidence may not be apparent for 20–30 years because currently most infections occur among young adults. Vaccination of previously unvaccinated children at age 11–12 years should result in a more rapid decline in the incidence of HBV infection. However, adolescent hepatitis B vaccination should not supplant vaccination of infants, because routine infant hepatitis B vaccination would eventually eliminate the need for adolescent and adult vaccination.

Vaccination recommendations are most effective when they become integrated into routine health care. Although preventive health services and vaccination visits for adolescents are not well established in the United States, hepatitis B vaccination of this age group has been successful in settings including schools and clinical practices (*4,5*). The ACIP has recommended that hepatitis B vaccination of adolescents be done as part of a routine adolescent vaccination visit at age 11–12 years. This visit should be used to ensure that all adolescents have received three doses of hepatitis B vaccine, two doses of measles-mumps-rubella vaccine, a booster dose of tetanus and diphtheria toxoids, and to assess whether adolescents are immune to varicella. The establishment of an adolescent vaccination visit provides the opportunity to deliver preventive health-care services to this underserved population.

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Notice to Readers

Availability of Applications for Public Health Leadership Institute

The CDC/University of California Public Health Leadership Institute (PHLI) is a 1-year scholars' program that includes an intensive on-site week, scheduled for March 18–23, 1996. The PHLI is conducted under a cooperative agreement between CDC's Public Health Practice Program Office and the University of California at Los Angeles. The fifth year of the PHLI will begin on October 30, 1995, with an orientation for scholars at the American Public Health Association annual meeting in San Diego.

Senior state, local, and international health officials, including deputy directors nominated by state health directors, are eligible. Applications must be submitted by August 31, 1995. Selected scholars will be notified by September 25, 1995. Additional information and applications are available from the Director, PHLI, telephone (510) 649-1599.

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